What are the advantages of alternative energy sources?

Virtual Lab

<http://www.glencoe.com/sites/common_assets/science/virtual_labs/CT13/CT13.html>

Read the Background information to complete the questions.

1. Define energy.
2. How do we know if a material has energy in it?
3. List the three categories of energy resources.
4. Circle the correct answer. Most energy resources used to generate electricity are
   1. Renewable
   2. Nonrenewable
   3. Too expensive to use
5. Define nonrenewable energy resources.
6. List three nonrenewable energy resources.
7. Why are nonrenewable energy resources used more widely than renewable energy resources?
8. Why are alternative energy resources constantly being explored?
9. What is the difference between inexhaustible and renewable energy resources?

Follow the procedure for doing the lab.

In the Virtual Lab, you will examine alternative energy sources and the setting in which they are most advantageous. Identify the factor that will most affect the production of energy and change that factor. You must have a minimum of three entries for each Energy source.

|  |  |  |  |
| --- | --- | --- | --- |
| Energy Source | Option Selected | Expense | Level of Energy Produced |
| Solar Energy | Sunny  Low Gusts  Non-Moving lake water  No Magma Bodies  No Forest and Farmland | Scale is 1 to 9 | Scale is 1 to 9 |
| Solar Energy |  |  |  |
| Solar Energy |  |  |  |
| Wind Energy |  |  |  |
| Wind Energy |  |  |  |
| Wind Energy |  |  |  |
| Hydroelectric Energy |  |  |  |
| Hydroelectric Energy |  |  |  |
| Hydroelectric Energy |  |  |  |
| Geothermal Energy |  |  |  |
| Geothermal Energy |  |  |  |
| Geothermal Energy |  |  |  |
| Biomass |  |  |  |
| Biomass |  |  |  |
| Biomass |  |  |  |

Journal Questions

1. What are the differences between nonrenewable, renewable and inexhaustible energy resources? Give an example of each.
2. Energy resources other than non-renewable energy sources are generally referred to as alternate energy sources. Why is it important to develop alternate energy sources?
3. Based on the results of the experiment, what type of settings are most suitable for each of the following five energy sources. Explain your answer?
   * Hydroelectric
   * Wind
   * Solar
   * Geothermal
   * Biomass
4. Given an isolated desert city with little wind and long dry days, throughout the year, what would you consider before recommending an alternative energy source? What alternative energy source would you recommend? Explain your answer.
5. Currently only about 10% of energy in the United States comes from the alternative energy sources. The remaining energy comes from non-renewable energy sources like coal, oil and natural gas. Why do you think this might be?